

Modern technologies of professional teaching in the system of life-long learning

Tecnologías modernas de enseñanza profesional en el sistema de aprendizaje permanente

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ABSTRACT

The professional education system is experiencing an active search for ways and methods to improve the quality of education, which increases the role of imitative teaching methods aimed at developing individual creative skills, forming specialized professional and personal qualities, their ability of adjustment and adaptability to the new economic conditions. Teaching methods as forms of interaction between teacher and students are intended to acquire skills, as well as to educate and develop personality. The teacher's task consists in the rational use of such teaching methods that ensure the best achievement of the objective, which is the training of qualified specialists. The diversity of these methods should increase students' interest in learning and cognitive activity.

This study concludes on the benefits of a professional school where, priority should be given to active teaching methods aimed at increasing students' cognitive activity, developing their personal initiative and potential, forming their creative approach and allowing them to solve important learning tasks. and organization

Keywords: quality of education, methods of professional teaching, future specialist, imitative teaching methods.

RESUMEN

El sistema de educación profesional está experimentando una búsqueda activa de formas y métodos para mejorar la calidad de la educación, lo que aumenta el papel de los métodos de enseñanza imitativos destinados a desarrollar habilidades creativas individuales, formando las cualidades profesionales y personales especializadas, su capacidad de ajuste y adaptabilidad a las nuevas condiciones económicas. Los métodos de enseñanza como formas de interacción entre el maestro y los estudiantes están destinados a adquirir habilidades, así como a educar y desarrollar la personalidad. La tarea del maestro consiste en el uso racional de tales métodos de enseñanza que aseguren el mejor logro del objetivo, que es la capacitación de especialistas calificados. La diversidad de estos métodos debería aumentar el interés de los estudiantes en el aprendizaje y la actividad cognitiva.

Este estudio concluye en los beneficios de una escuela profesional donde, se debe dar prioridad a los métodos de enseñanza activos destinados a aumentar la actividad cognitiva de los estudiantes, desarrollar su iniciativa y potencial personal, formar su enfoque creativo y permitirles resolver importantes tareas de aprendizaje y organización.

Palabras clave: calidad de la educación, métodos de enseñanza profesional, futuro especialista, métodos de enseñanza imitativos.

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Introduction

In the conditions of competitiveness, in order to meet the requirements of the market economy, an educational institution has to take care of its specialist training quality. The encyclopedia of professional education defines quality as a complex of properties and characteristics of a product, service or work which determine their ability to satisfy people's needs and demands, serve their purpose and meet the required conditions. The quality is determined by the degree in which the product, work or service corresponds to the conventions and requirements of standards, agreements, contracts or customer needs. It is universally accepted to differentiate the quality of a product, work, labor, materials, goods, services [3]. Academician A.N. Romanov defines quality as a synthetic indicator reflecting a complex manifestation of many factors, from the dynamics and level of a national economy development to the ability to organize and manage the process of forming the quality within any economic unit [9]. The world's experience shows that in the conditions of open market economies, impossible without intense competition, the factors appear which make quality a condition of manufacturer existence, a measure of a business's efficiency or a country's economic well-being [18-22].

The notion of knowledge quality implies the correlation between the types of knowledge (laws and patterns, theories, applicative knowledge, work mode knowledge, evaluative knowledge, worldview knowledge) and the education content as well as the level of achievement. In accordance with this, the knowledge quality has the following characteristics: *completeness*, i.e. the amount of knowledge about objects, phenomena, processes; *depth*, i.e. the complex of digested connections and relations between different knowledge; *systematic character*, i.e. understanding the complexity of knowledge, its continuity and interrelation; *system*, i.e. understanding the place of some knowledge in the structure of a scientific theory and its practical application; *operational efficiency*, i.e. the ability to use knowledge in different learning and training situations; *flexibility*, i.e. the ability to find variable ways of using knowledge in changed, untypical conditions; *concreteness*, i.e. the ability to divide knowledge into elements and use generalized knowledge in learning and training conditions; *generalization*, i.e. the ability to express particular knowledge in a generalized conceptual form. Knowledge quality is also characterized by consciousness (understanding the ways of its receiving, the ability to prove it) and stability (sustainable storage of sufficient knowledge and ways of its application). All the characteristics of the knowledge quality are independent and do not replace each other. The most important in professional education are such knowledge qualities as operational efficiency, flexibility and consciousness as they critically influence the development of sound proficiency of qualified workers and specialists.

Currently, the educational services market is facing the process of intense perfection. It makes educational institutions reconsider the approach to the training of professional specialists. Much attention is given to the education content and to teaching technologies. In this connection educational institutions have to develop new teaching methods and procedures, create new organizational forms of pedagogical activity.

Literature review

Wide-scale development and implementation of teaching technologies began in the 60s-70s of the last century in Europe and the USA and is mostly connected with the works of B. Bloom [1]. F. Percival and G. Ellington point out that the term '*an educational technology*' includes every available kind of providing information [8]. This can be the equipment used in education, such as TV, different data projectors, etc.

Many foreign scientists distinguish 4 scientific views on defining and using the term 'a pedagogical technology':

- pedagogical technologies as a MEANS, i.e. production and usage of tutorial tools, apparatus, training facilities and technical equipment in the educational process [4, 16];
- pedagogical technologies as a METHOD, i.e. it is a communication process (mode, model, the technique of fulfilling learning tasks), which is based on a certain algorithm, program, system of interaction between the participants of the pedagogical process [10, 15];
- pedagogical technologies as a SCIENTIFIC FIELD, within which they are approached as a vast area of knowledge based on the data accumulated by social, managerial and natural sciences [5, 13];
- pedagogical technologies as a MULTIDIMENSIONAL CONCEPT, which represents a multi-faceted approach and implies that *pedagogical (educational) technologies are a multidimensional process* [6, 7].

D. Finn notes that only naïve people consider a technology to be only a complex of equipment and training toolkits. However, this implies much more. This is an organizational mode, this is a thoughtway about materials, people, institutions, models and systems of the 'man – machine' type.

Having analyzed more than a hundred works on the subject under consideration, P.D. Mitchell believes that a pedagogical technology is a research and practice field (within the framework of education) related to all aspects of pedagogical systems arrangement and to the procedure of distributing resources in order to achieve specific and potentially reproductive results [7]. UNE-

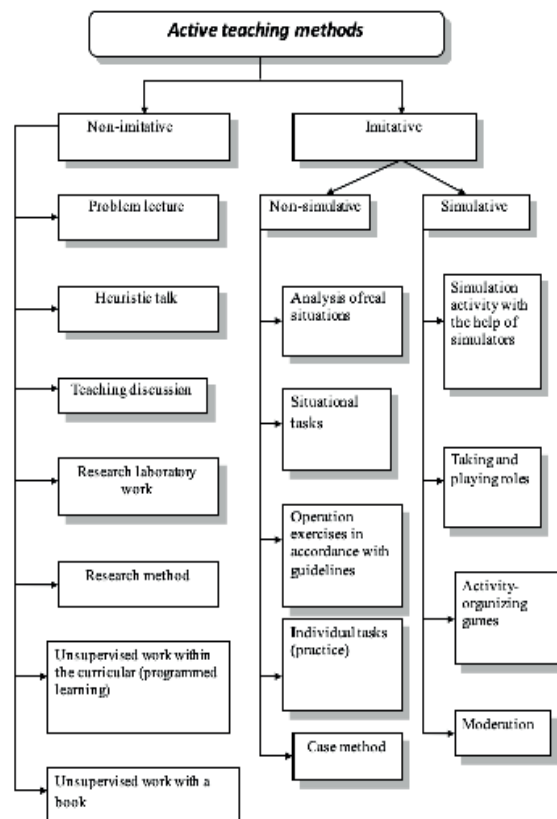
SCO offers a wide approach to a pedagogical technology. It is a systematic method of planning, using and evaluating the entire teaching and learning process by means of considering people and technical resources and interaction between them in order to achieve a more effective mode of education. Speaking about the technology of pedagogical work, A.S. Makarenko warned that “we pedagogues flew very high theoretically, however, were very low practically. We used to think that we would supply a child with a good qualification, but in fact only supplied with the skill to make a bad stool... I personally experienced a feeling of pathos when I had a bad stool made. Later, I got rid of this pedagogical prejudice.” [11].

Nowadays there are more than 2,000 business games used in the world. Experimental game modelling has been intensely developing since the 50s of the 20th century. The first games were worked out in the USA, gradually business games spread throughout England, Canada, Japan, France, Germany, Poland, and Russia. In Russia, the large-scale game *The Reform* appeared in 1966 followed by *Aster* in 1968. A number of scientific centers have been created aimed at developing the theory and practice of business games; regular seminars on active teaching methods have been held. In the past years, business games have gained the largest popularity.

The shift to the market economy and the necessity in an informal system of specialist training triggered the wide use of game modelling in the educational process of universities. A business game can be seen as a *modelling of a specialist real activity* in any specially created pedagogical or business situations. A business game is a means and method of preparing and adapting to the labor activity and social contacts.

Proposed Methodology

In our time of rapid development of information it is crucial to constantly renew knowledge. It can be mainly achieved through self-education, which, in its turn, demands cognitive activity and self-dependence. A teacher’s task consists in developing students’ aspiration for learning, teaching them to respond to the cognition process, developing their interest in a learning discipline. In this regard, students should learn to think independently, develop a good sense of a new situation, find their own approach to solving a given task, and have a desire to digest information or find it independently. These qualities can lead to developing active teaching methods whose appearance and cultivation are determined by the fact that studying now has new tasks: not only giving knowledge, but also forming and developing cognitive interests and abilities, creative thinking, abilities and skills of independent mental work. The new tasks are due to constant evolution and renewal of information. In the past, the knowledge received at school, college or university used to serve a person for a long time, sometimes for a whole life. In the age of information boom it is necessary to constantly renew it. Active teaching methods can be used at different stages of study: in introducing knowledge, in fixing and perfecting it, in forming skills. Yet, it is impossible to divide the existing teaching methods into active and non-active. Using different techniques of cognitive activity activation a teacher works towards increasing student cognitive activity. In accordance with their purpose either to form the system of knowledge or to acquire skills and expertise, active teaching methods are divided into imitative or non-imitative (Graphic. 1).



The analysis of works on the imitative teaching methods usage allowed establishing their advantages, disadvantages and their specifications in training a specialist as well as evaluating the efficiency of their usage at lessons in a professional school. [2, 12, 14, 17].

Result Analysis

Imitative teaching methods divide into simulative and non-simulative. Imitative non-simulative teaching methods comprise analyzing particular real situations, solving situational tasks, fulfilling operation exercises in accordance with guidelines, fulfilling individual tasks (practice), and the case method.

The analysis of real situations consists in presenting to students a particular business situation with its conditions and participants' actions. The students should analyze and evaluate the correctness of the actions. Such analyzing tasks are to be done individually or in small groups of three to five students, whose decisions are then to be discussed jointly.

The students' task is to come to a collective managerial decision in the particular situation. The teacher makes a general conclusion characterizing and evaluating each project. The usage of *the analysis of real situations* method only makes sense with particular, relatively structurally complex economic or managerial tasks the correct solution to which is known to the teacher in advance.

While solving *the situational business task*, students develop professional skills. The basic didactic material is a situation task which comprises the conditions (the description of the situation and initial quantity data) and a question (task) set for the students. A situation task must contain all the data necessary for its solution, and in the case of their shortage it must be possible to extract them from the given information. The tasks must completely correspond to the students' specialization and qualification or be slightly more difficult than those which they will have to solve in their future professional activity. One of the basic aims of this method is acquiring skills of applying theoretical knowledge in the process of solving particular managerial situations. Thus, in the course of the lesson, the received theoretical knowledge is systemized, the skills of holding a discussion are developed as well as managerial and conformity skills.

While fulfilling *operation exercises in accordance with guidelines*, students should come to independent conclusions about properties of different substances, interconnection and interdependence between them and about methods of establishing these properties. On the basis of experiments, students make conclusions and theoretical generalizations. The experiments with different substances and methods enrich the collective experience and make theoretical statements more reasoned and persuasive.

The method's value is in the unity of theory and practice, in the support of the learning material by practical skills.

In the course of fulfilling *individual tasks in the process of internship* students of secondary professional schools acquire skills and expertise in one or more professions within their specialization. Professional internship is the first stage of continuous practical learning, an integral part of specialist training in modern economic conditions. Practical learning does not only allow receiving special knowledge and skills, but also facilitates the reinforcement of theoretical knowledge. Professional internship is the most supervised form of practical learning and provides a definite consistent student work mode.

The case method is a set of descriptive statements about a situation or events which a specialist may face in his/her professional activity, and possible ways of solving the problems. Students are to find and describe concrete actions for solving the given problem and consider advantages and disadvantages of each variant in order to choose the best possible variant as the person in trouble may think fit.

Imitative simulative teaching methods include simulation activity with the help of simulators; taking and playing roles; business game and moderation.

Simulation activity with the help of simulators develops action skills which become automatic as a result of multiple repetitions.

For *taking and playing roles* it is critical to set one certain task for the students. In the course of its solving, the participants play roles characterized by different interests; their interaction should bring them to a compromised decision.

The business game facilitates developing future specialists' creative abilities, expands their individuality and independence.

Business games have widely spread in the past years. The shift to the market economy and the necessity in an informal system of specialist training triggered the wide use of game modelling in the educational process. The business game can be seen as modelling of a "specialist's" real activity in any specially created pedagogical or business situations. The business game is a means and method of preparing and adapting to the labor activity and

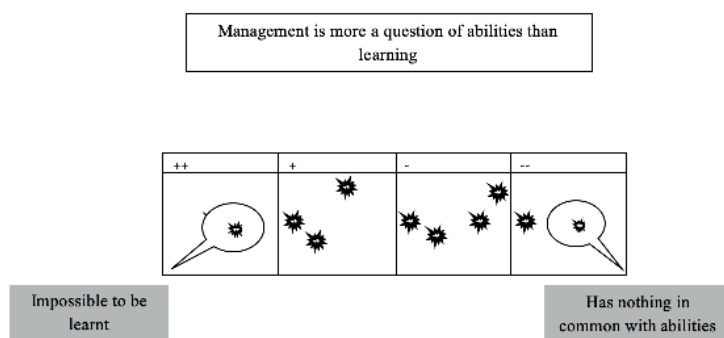
social contacts.

A vivid example of a teacher's creative search of pedagogical art perfection is the usage of *the imitation moderation method*. It is generally assumed that in meetings, sessions and conferences there is a leader who knows everything best, that is why he/she establishes the order of the event, sets the targets and the desired result. Such a method does not allow the participants to really take part in the discussion and deprives them of the last word.

The moderation is the process of setting rules and monitoring their execution in the work with an audience. The moderation is a way of holding a meeting which will bring to quicker results and which provides the participants with the possibility to take collective decisions as their own.

The technology of this method implies dividing the process of discussing a problem and taking decisions into more or less smaller parts which need different moderation methods. A moderator uses different auxiliary aids, e.g. *Pinwand* (a soft board, usually made of cork, which is easy to pin cards to) and colored cards. The method of moderation suggests the usage of different information processing methods, such as filling cards on given topics by each participant, pinning the cards to the *Pinwand*, sorting, finding similar answers, classifying the cards, discussing and evaluating spoken ideas at the plenary meeting, making catalogues of action points, etc. Thus, the problematic topic *Elaborating the Program of Training and Retraining Leaders* the assumption "*Management is more a question of abilities than learning*" comes forward. It is evaluated on the four-step scale (++, +, -, --). The result is to be discussed collectively in the group; the moderator fixes the participants opinions on the flipchart page (pic. 2).

The results evidently show that management is partially dependent on learning. This proves that training leaders is a thing which is worth doing.



- the main statement is *both factors are important*;
- acquired skills are more important than abilities;
- 2 opinions opposite to the majority;
- the main emphasis is made on training;
- the group is not homogeneous.

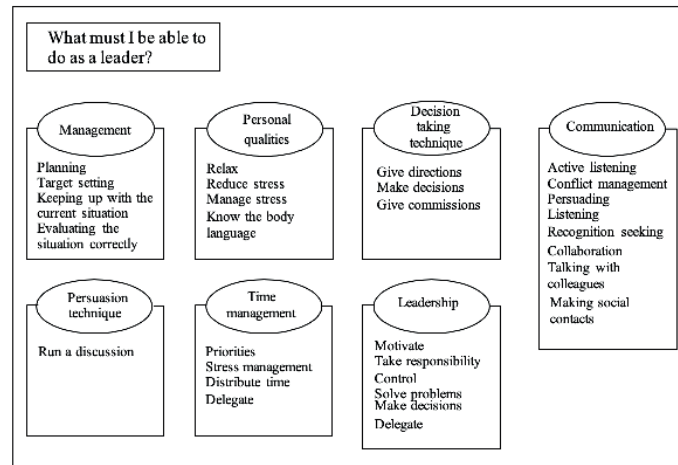
Graphic 2. Participants' evaluation of the assumption "*Management is more a question of abilities than learning.*"

The second stage of the moderation is the answer to the question "*What must I be able to do as a leader?*" After some opinions have been spoken out aloud, the answers are also to be pinned to the *Pinwand*. At the same time, the answers can be sorted, with similar answers to be clustered together. Each cluster receives a corresponding heading.

At the next stage of the method, the heading are to be compiled into topic catalogues as the prior learning points (pic. 3). As it is impossible to learn everything in all spheres simultaneously, it is necessary to think everything through and make a choice. For this reason the question "*What three spheres do I need urgent training in?*" is set. Each participant receives three round cards and determines with their help the necessary topics. He/she can attach all the cards to one topic. Depending on the number of the attached cards, the most actual topic is chosen.

In order to determine subtopics, smaller problems and assumptions are singled out within each topic. These smaller issues are taken consideration in small groups. The results are then presented to all participants on the flipchart, and they can be complemented by other participants' ideas.

At the final stage of the moderation all the action points are inserted into the catalogue of action points, with deadlines and those who are in charge of each action point.



Graphic 3. Suggested learning topics

As another example of the moderation method we can suggest solving the problem “*What qualities must a modern teacher possess?*” The task is to propose 7 qualities from the point of view of administration, parents, students, and teachers. The participants cluster into four groups correspondingly, who in the course of a discussion propose the teacher’s qualities from the point of view of their group. The results of the discussion are presented in Table 1.

Table 1. A modern teacher’s qualities

Groups	Qualities
Administration	<ol style="list-style-type: none"> 1. Professionalism. 2. Extraordinary performance capacity. 3. Responsibility. 4. Honesty. 5. Sense of duty. 6. The teacher image increasing the university prestige. 7. Readiness to teach several disciplines.
Parents	<ol style="list-style-type: none"> 1. Professionalism. 2. Fairness. 3. Emotional balance. 4. Full commitment to the teaching work regardless of his/her own family. 5. Complementary classes for students. 6. Health. 7. Responsibility.
Students	<ol style="list-style-type: none"> 1. Communicability. 2. Interesting classes. 3. Fairness. 4. Empathy. 5. Helpfulness. 6. Emotional balance. 7. Sense of humor.
Teachers	<ol style="list-style-type: none"> 1. Personality. 2. Health. 3. Image. 4. Time management. 5. Upgrade qualifications. 6. Working efficiency. 7. Conflict and stress sustainability.

At the next stage, the necessary qualities were determined. After discussions in small groups and in the plenary meeting, the participants singled out emotional balance, the teacher’s image and fairness.

Within the chosen qualities, the following focus areas for further discussion and problem solution were outlined: what this quality is necessary for, why this quality may be underdeveloped and how it can be trained, what difficulties may occur in the process of developing this quality.

As a result of the moderation, within each focus area a catalogue of further action points was created aimed at

developing the chosen qualities in a teacher.

Tables 2 and 3 show what personal characteristics and professional knowledge can be developed by means of using particular imitative teaching methods.

Table 2. Developing personal characteristics by means of imitative teaching methods

Teaching methods	The analysis of real situations	Situational business tasks	Exercises in accordance with guidelines	Individual tasks (practice)	Simulation activity with the help of simulators	Taking and playing roles	The business game
Personal characteristics							
Empathy	+	+	-	-	-	+	+
Authenticity	+	+	-	+!	-	+!	+!
Stress sustainability	+	+	-	+	+!	+!	+!
Perception maturity	+	+	+	+!	+	+!	+!
Intuition maturity	+	+	-	+!	+!	+!	+!
Analyticity	+	+	-	+!	-	+!	+!
Reaction rapidness	-	-	+	-	+!	+!	+!
Observation skills	+	+	-	+	+	+	+!
Criticism and mental wholeness	+	+	-	+	-	+	+
Communicability	+	+	-	+	-	+!	+!
Risk taking capacity	+	+	-	-	-	+!	+!
Responsibility	+	+	-	+!	-	+	+
Leadership and conformity abilities	+	+	-	-	-	+!	+!

Note:

- + – the method forms the personal quality;
- – the method does not form the personal quality;
- +! – the method is the best in forming the personal quality.

Table 3

Developing professional knowledge by means of imitative teaching methods

Teaching methods	The analysis of real situations	Situational tasks	Exercises in accordance with guidelines	Individual tasks (practice)	Simulation activity with the help of simulators	Taking and playing roles	The business game
Basic professional characteristics of knowledge quality							
Completeness	+	+	+	+	+	+	+
Depth	+!	+	+	+	+	+!	+!
Systematic character	-	-	+	+!	-	+	+
System	-	-	+	+!	-	+	+

Operational efficiency	+!	+	+!	+	+!	+!	+!
Flexibility	+	+	-	+	-	+!	+!
Concreteness	+	+!	+	+!	+!	+!	+!
Generalization	+	+	+	+!	+	+	+!

Note:

+ – the method forms the characteristic of knowledge quality;

- – the method does not form the characteristic of knowledge quality;

+! – the method is the best in forming the characteristic of knowledge quality.

The comparative analysis of the imitative teaching methods usage brings to the conclusion that none of the suggested methods taken separately forms the competitive specialist to the full extent. It is necessary to combine them and apply together, which will allow forming professional and personal qualities of the future competitive graduate. This made it possible for us to work out a new imitative teaching method which we called *the Simulative Company* and consider to be a systemized complex of imitative methods [12].

Conclusion

The established advantages and disadvantages of the used imitative teaching methods allowed us to determine specifics of their usage which facilitate forming and developing personal and professional characteristics of a future specialist in the process of his/her training.

In the research, two types of characteristics were taken into consideration: the professional knowledge quality (completeness, depth, systematic character, system, operational efficiency and others) and personal qualities (empathy, authenticity, stress sustainability, perception and intuition maturity, analyticity, reaction rapidness and others).

The Simulative Company as a teaching method comprises all characteristic methodology properties (certain forms and management of student learning activity; specific knowledge acquisition; managing and exchanging learning information between the teacher and students; stimulation and motivation of the student learning activity; monitoring the educational process efficiency) and provides the teacher with the following **possibilities**:

- ***in the educational process arrangement*** – to project the educational activity elements on the workplace; to create the simulation of the student's future real professional activity; to match the learning goals with commercial tasks; to practically show the students interpersonal relations in the market environment, etc.;
- ***in setting pedagogical teaching goals*** – to decrease dramatically the gap between the process of education and the market requirements; to establish new interrelationships between the teacher and students; to form and develop students' individual qualities in the professional, managerial and ethic projections; to increase the students' motivation for the chosen specialty; to gain the experience of team work, etc.;
- ***in pedagogical tasks solving*** – to perfect the quality of the competitive specialist training; to increase their ability to adapt to new types and conditions of their professional activity; to encourage students to continuously enhance their professional art; to develop the skills of rapid orientation in the information flow, etc.

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